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ENGINEERING EXHIBIT EE-1:

NEW EXPANDED BAND AM BROADCAST STATION
THREE ANGELS CORPORATION
Charlotte Amalie, St. Thomas, VI (WGOD)

Pending:	**1690 kHz**	**1.0 kW-N/10 kW-D**	**ND**	**U**
Proposed:	**1690 kHz**	**1.0 kW-D&N**	**ND**	**U**

17 January 2006

FCC FACILITY ID NUMBER 87157

ENGINEERING EXHIBIT
IN SUPPORT OF
AN AMENDMENT TO A PENDING APPLICATION FOR
NEW EXPANDED BAND AM BROADCAST STATION
PREPARED IN RESPONSE TO
COMMISSION LETTER DATED MARCH 13, 2000

Mullaney
Engineering, Inc.

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DECLARATION

I, Alan E. Gearing, declare and state that I am a graduate electrical engineer with a Bachelor of Science degree in Electrical Engineering from SUNY University at Buffalo, that I am a registered professional engineer in the District of Columbia (since 1979), and that I have provided engineering services in the areas of broadcasting and radio communications since 1973. My qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission. I am a senior engineer with the firm of Mullaney Engineering, Inc., consulting broadcast and radio communications engineers with offices in Gaithersburg, Maryland.

The firm of Mullaney Engineering, Inc., has been retained by THREE ANGELS CORPORATION (licensee of AM radio station WGOD, 1090 kHz, Charlotte Amalie, St. Thomas, Virgin Islands) to prepare the instant engineering exhibit and Section III-A of FCC Form 301 [September 2004 version] in support of ***an Amendment to a pending Application for Construction Permit for a new expanded band AM broadcast station*** to operate on 1690 kHz at Charlotte Amalie, St. Thomas, Virgin Islands [FCC FACILITY ID NUMBER 87157].

All facts contained herein are true of my own knowledge except those stated to be on information and belief, and as to those facts, I believe them to be true. I declare under penalty of perjury that the foregoing is true and correct.

Alan E. Gearing, P.E.
District of Columbia Number 7406

Executed on the 17th day of January 2006

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17 January 2006

NARRATIVE STATEMENT:

I. GENERAL:

This narrative statement, and the instant engineering exhibit of which it is part, have been prepared on behalf of THREE ANGELS CORPORATION (hereinafter "Three Angels"), licensee of AM Broadcast Station WGOD(AM), Charlotte Amalie, St. Thomas, Virgin Islands. WGOD is a Class D station currently licensed to operate on the frequency of 1090 kHz daytime only with power of 250 watts and employing a non-directional antenna.

Station WGOD was **allotted the expanded band frequency of 1690 kHz** by the *Memorandum Opinion and Order* in MM Docket No. 87-267, adopted 27 February 1997 and released 17 March 1997. In response to FCC Public Notice DA 97-537, released 17 March 1997, an application for construction permit was filed for the expanded band allotment [See FCC File No. BP-19970616AR]. That application was prepared pursuant to the guidelines contained in the FCC Publications *AM Expanded Band Fact Sheet* and *Filing Instructions for AM Expanded Band Allotments*, both dated 18 April 1997. Model I facilities were specified as was specifically mandated in Commission letter dated April 22, 1997.

BP-19970616AR was granted by the Commission on January 29, 1998 - but that grant was subsequently rescinded by Commission letter dated March 13, 2000. The reason for rescinding the grant given in the Commission letter was that France had filed an objection on behalf of its territories of Martinique and Guadeloupe. The French claimed that the original proposal by Three Angels for operation on 1690 kHz at Charlotte Amalie did not comply with Section 1.2 and/or 1.3 of Article 5 of the Final Acts of the Regional Administrative Radio Conference, Rio de Janeiro 1988 (hereinafter "Rio 1988").

In follow-up discussions with the Commission staff, Three Angels was informed that despite the fact that 1690 kHz was allotted to Charlotte Amalie with the assumption of Model I facilities (power of 10 kW daytime, 1 kW nighttime using non-directional antenna), due to proximity to other Region 2 countries facilities in excess of the standardized parameters specified in the Rio 1988 agreement could not be authorized without the consent of the affected countries (in this case France). ***Three Angels therefore amends its pending expanded band proposal to specify the equivalent of Region 2 standardized parameters.***

The proposed facilities will be constructed to comply with the *FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*. Furthermore, since no new tower construction is involved, the instant proposal is believed to be **categorically excluded from environmental processing - including Section 106 review** - pursuant to the provisions of §1.1306 of the Commission's Rules. A more detailed discussion of environmental factors is included under the heading Environmental Considerations below.

Information requested by exhibits in response to questions on Section III-A of FCC Form 301 [September 2004 edition] is incorporated in the following paragraphs, figures, and tables

II. ENGINEERING DISCUSSION:

Since the instant proposal is for a site location within 20 km of the original allotment coordinates listed in the March 17, 1997 Public Notice and since equivalent Model I facilities are being proposed (with the exception of reduced daytime power to comply with Region II requirements), only certain portions of the FCC's Form 301 need be completed as specified in the FCC's *Filing Instructions for AM Expanded Band Allotments* dated April 18, 1997. In particular the following supporting exhibits ***are not*** required: vertical plan sketch of the proposed structure; aerial photographs of the site and vicinity; daytime and nighttime allocation studies; coverage contours other than for the 5 mV/m and 0.5 mV/m; topographic map showing the location of the proposed site. The omitted material will be supplied upon request of the Commission.

A. Proposed Antenna Location:

Three Angels still proposes to diplex the 1690 kHz expanded band operation onto the existing WGOD 1090 kHz non-directional antenna. The geographic coordinates of the WGOD tower are [NAD27 Datum]:

Latitude: 18° 18' 57"
Longitude: 64° 53' 02"

Other than WGOD, there are no known radio stations within the general vicinity of the proposed site. In fact, except for WGOD no AM, FM or

TV Broadcast stations are located within three kilometers of the proposed expanded band site. No adverse interaction is expected between the existing WGOD operation on 1090 kHz and the proposed non-directional expanded band operation.

B. <u>Proposed Facilities</u>:

The WGOD radiator proposed for use by Three Angels' expanded band operation is a base-insulated, guyed, uniform cross-section, steel tower, 57.9 meters (190 feet) tall. The tower is supported by a 1.5-meter (5-foot) base pier and insulator, for an overall height above ground level (AGL) of 59.4 meters (195 feet). The site elevation is 6.1 meters (20 feet) above mean sea level (AMSL), producing an overall height of 65.5 meters (215 feet) AMSL. Since the overall height above ground is less than 60.96 meters (200') and the site is not near any airports, neither notification to the Federal Aviation Administration (FAA) nor registration with the FCC are required. (This conclusion was confirmed by running the WGOD antenna structure through the FCC's online TOWAIR program.)

The ground system consists of 120 copper wire radials, nominally 68.7 meters (225 feet) in length evenly spaced about the tower.

At the proposed expanded band operating frequency of 1690 kHz, a 57.9-meter tower is equivalent to 117.5 electrical degrees and the 68.7-meter ground system is equivalent to 139.4 electrical degrees. Calculations employing a computer program based on Figure 8 of Section 73.190 of the FCC Rules, show that the theoretical efficiency of the

proposed antenna system will be 323.4 mV/m at one kilometer for one kilowatt, in compliance with the requirements of Section 73.189 of the FCC Rules.

The Region 2 standardized parameters for an expanded band station are: 1 kW power day and night; a non-directional antenna with an electrical height of 90 degrees; and a characteristic field strength of 310 mV/m at 1 km. In order to compensate for a radiator height in excess of 90 electrical degrees Three Angels proposes to reduce the operating power of its proposed expanded band station to 920 watts, day and night. This will result in a unattenuated field strength of 310 mV/m at 1 km, in compliance with the Region 2 standardized parameters.

C. <u>Blanketing and Principal Community Coverage</u>:

Figures 1 and 1-A are maps showing pertinent coverage contours. From the maps, it is clear that the principal community to be served (Charlotte Amalie, St. Thomas, Virgin Islands) is well within the proposed 5 mV/m contour for both daytime and nighttime operating modes. (The 50% RSS limit on 1690 kHz at Charlotte Amalie was determined to be 1.02 mV/m, less than the normally protected 5 mV/m value.)

A computerized analysis of the population contained within the proposed blanketing area indicates that there are 33 persons living within the proposed 1000 mV/m - well below the 300 person threshold criteria specified in §73.24(g). Mortenson will fully comply with the provisions of §73.88 concerning responding to reports of blanketing interference.

D. Conductivities and Unattenuated Field Strengths:

The computerized representations for neither the FCC Conductivity Map (Figure M-3) nor the Region 2 Agreement Conductivity Map, contained any data for the Virgin Islands. Consequently, it was necessary to employ assumed conductivity data in calculating distances to contours for the proposed expanded band operation. The nearest land mass for which conductivity data is available is the island of Puerto Rico. The ground conductivity for Puerto Rico varies from a high of 10 mS/m along most of the coastal area to a low of 2 mS/m for the interior mountains. As a worst case for showing coverage, a conductivity of 2 mS/m was assumed for the entire Virgin Islands. Where applicable, the equivalent distance method was used to establish the distances to contours.

F. Environmental Considerations:

The applicant believes its proposal will not significantly affect the environment for the following reasons. Use of an existing transmitting site is an environmentally desirable alternative (see Note 1 to §1.1306 of the Rules).

With regard human exposure to radiofrequency radiation in excess of applicable safety standards, prior to beginning regular operation with the proposed 10 kW 1690 kHz facilities, measurements will be performed to determine if the existing tower base fencing is adequate. Based upon the measurement results, the fenced area will be expanded to enclose any area in which the measurements exceed the appropriate ANSI guideline value. The fence gate will be kept locked and appropriate warning signs are posted on each face of the fence. Procedures will be adopted to protect

workers requiring access to the tower inside the fenced area, including reduction of power of cessation of operation, to comply with germane ANSI standards.

III. SUMMARY:

Three Angels proposes to employ the existing WGOD 1090 kHz non-directional antenna for a new expanded band station operating on 1690 kHz and licensed to Charlotte Amalie, St. Thomas, Virgin Islands.

Operating as proposed, the daytime and nighttime 5 mV/m coverage contours would provide 100% coverage to the principal community of Charlotte Amalie. The proposed operation would not involve any prohibited contour overlap, would not cause or receive prohibited interference, and would not have any significant impact on the environment. The proposed operation is fully in compliance with the Commission's rules and applicable international agreements.

Alan E. Gearing, P.E.